

# CLAIMS

1. A measuring method for determining values of viscosity coefficients of a liquid crystal by fitting Ericksen-Leslie theoretical values to measured response characteristics, the measuring method comprising the steps of:

- measuring ON response characteristics of a liquid crystal cell with homogeneous alignment;

- determining a value of a rotational viscosity coefficient  $\gamma_1$  from the measured ON response characteristics;

- measuring OFF response characteristics of the liquid crystal cell; and

- determining values of Miesovicz shear viscosity coefficients  $\eta_1$  and  $\eta_2$  from the measured OFF response characteristics.

2. A measuring device for determining values of viscosity coefficients of a liquid crystal by fitting Ericksen-Leslie theoretical values to measured response characteristics, the measuring device comprising:

- a light source illuminating a liquid crystal cell;

- a voltage supply capable of switching a voltage to be applied to the liquid crystal cell between high and low levels;

- a transmittance measuring unit capable of collecting transmittance data for light originating from the light

source and passing through the liquid crystal cell, at intervals of 100  $\mu$ s or less, from the switching point at the voltage supply; and

an arithmetic unit for determining a value of the rotational viscosity coefficient  $\gamma_1$  by fitting the theoretical values calculated on varying  $\gamma_1$ , to data collected by the transmittance measuring unit when the voltage supply is switched to the high level; and for determining values of the Miesovicz shear viscosity coefficients  $\eta_1$  and  $\eta_2$  by fitting the theoretical values calculated on varying  $\eta_1$  and  $\eta_2$  while  $\gamma_1$  is fixed at the value previously determined, to data collected by the transmittance measuring unit when the voltage supply is switched to the low level.